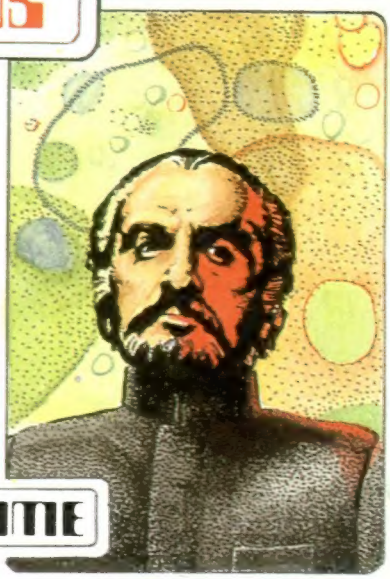
THE CLAWS OF AXOS

DOCTOR WHO



AN ADVENTURE IN SPACE & TIME

code: 666 ~ Bob Baker & Dave Martin

A strange, organic-looking spaceship is on course for Earth and is detected by a UNIT tracking station.

At UNIT HQ there is a problem in the form of Chinn, a Ministerial official leading a security investigation. Also visiting is an American agent, Bill Filer, who wants to discuss the Master. A call comes through telling of the approaching spaceship and, despite an abortive attempt by Chinn to blow it up, the ship lands in England, near the Nuton atomic power complex. The officious Chinn orders Filer to stay away while UNIT investigates the ship.

When a tramp approaches the alien ship a tendril snakes out and drags him inside. The ship assesses him before draining all of the energy from his body and ejecting the husk. Acting on his own initiative, Filer arrives at the site before UNIT. He too is seized and drawn inside.

The UNIT convoy arrives and, over the mobile HQ's radio equipment, the Doctor, Jo and the others hear a cry for help from the ship. Jo is ordered to stay behind as the Doctor and the Brigadier lead a party to investigate.

Entering the alien ship, the Doctor's party is met by a group of gold-skinned humanoids, the Axons. The creatures ask if they can remain on Earth while they repair their damaged ship. In return, they offer a gift - Axonite - which has the ability to increase the growth rate of food animals and will prove beneficial to Man. Chinn sees Axonite as a way to power while Hardiman and Winser, scientists from the Nuton complex, are keen to run experiments on it. The Doctor, however, is highly suspicious.

Slipping away from the mobile HQ, Jo enters the spaceship. Inside, she sees a hideous, many-tentacled creature and faints. When the Doctor finds her she revives and tells him that she heard Filer's voice. However, the Doctor seems to accept the Axons' assurance that this and the monster were hallucinations caused by the ship's power.

Filer finds himself a prisoner in a cell with none other than the Master. Together they try to escape, but are recaptured. Filer is taken to the Eye of Axos at the heart of the ship, where an Axon replica is made of him.

Determined to gain control of Axonite, Chinn contacts the Ministry. He is granted special powers and places the UNIT personnel under arrest, save for the Doctor who is to help Winser run tests on the Axonite.

The Axons need Axonite distributed worldwide within seventy-two hours to enable them to feed on the planet's energy, so they release the Master, retaining his TARDIS to ensure his co-operation. The Master infiltrates UNIT HQ in disguise and sends a message about Axonite to the UN. He also has the Doctor's TARDIS sent to Nuton.

Filer's duplicate is sent to kidnap the Doctor as the Axons know he is not human and wish to question him. The real Filer escapes and makes his way to the complex, where he and the Doctor are able to overcome the duplicate.

As Axonite has defied all tests the Doctor places it in the particle accelerator, which activates it. Winser returns and is killed by the Axonite when he tries to remove it from the machine. The Doctor now realises that Axos, the Axons and Axonite are all parts of a single entity, on Earth to absorb all living energy. Axon monsters appear and kidnap Jo and the Doctor, taking them to Axos, which demands the secret to time travel. The Doctor protests that an enormous source of energy would be needed, but the alien dismisses this obstacle - it has the Nuton complex.

At the complex, an Axon walks into the nuclear reactor and starts to overload it. The Master has meanwhile returned and broken into the Doctor's TARDIS. However, he is captured by the Brigadier, who forces him to help defeat Axos. The Master uses the TARDIS to absorb the power of the reactor and hurl it at the alien parasite in one surge. As Axos convulses, the Doctor and Jo escape.

Returning to the complex, the Doctor argues that with the Master's help he may be able to destroy Axos. Reluctantly, the Brigadier agrees. The two Time Lords escape in the TARDIS as the Axons start to over-run the complex.

To the Master's surprise, the Doctor materialises the TARDIS inside Axos, where he explains that he is prepared to join his ship to the Axon drive mechanism, making it one giant TARDIS. The Axons accept, but are tricked as the Doctor hurls Axos into a time loop from which it can never escape.

At the complex, UNIT watch as the Axons disappear. They then escape to a safe distance before the building explodes. Having broken free of the time loop, the Doctor lands back on Earth, where he admits that the Master may also have escaped. He reveals that the Time Lords have programmed the TARDIS always to return to Earth - he is like some sort of galactic yo-yo!

- NEW 27A/28 -

36. 3 F — 19. INT. TARDIS. DAY
Twds door
Let DR and MASTER in
PAN them R

MASTER: Well, Doctor, I'm still waiting to hear this wonderful scheme of yours.

DOCTOR: There isn't one, actually. There's no way of stopping Axos now.

MASTER: Oh?

37. 4 C — CU MASTER
DOCTOR: If you can get the Tardis going, we can both escape.

38. 5 D — CU DOCTOR
MASTER: Tell me, Doctor, are you suggesting an alliance?

39. 3 F — MC 2-S DR comes fwd to make DEEP 2-S
DOCTOR: Why not? I certainly don't intend to end my days as a heap of dust on a second-rate planet to a third-rate star.

MASTER: What! Do you mean you're prepared to leave your beloved Earth to the Axons' tender mercies?

DOCTOR: Certainly. We are both Time Lords.

MASTER: Why should I help you?

DR goes u/s to make new 2-S
DOCTOR: If you don't I'll hand you back to UNIT. You'll be a prisoner on a doomed planet.

MASTER: And you'll be doomed with me.

40. 4 C — CU DR
DOCTOR: Exactly. We escape together. Or we die together.

41. 5 D — CU MASTER
MASTER: Why so generous, Doctor? Why not hand me over to UNIT and escape yourself?

42. 4 C — 2-S
DR comes fwd

43. 5 D — CU DR

- NEW 27A/28 -

- NEW 29 -

(43 on 5)

44. 3 F — CU MASTER
DOCTOR: The Time Lords have put a block on my knowledge of The Theory of Dematerialisation.

45. 5 D — CU DR
MASTER: Ah, I see.....

46. 4 C — CU MASTER
DOCTOR: Well, make up your mind. Time's running out.

47. 3 F — M 2-S
MASTER: Very well, Doctor; I accept.

DOCTOR: Well, you're a mechanic. What's the answer?

48. 4 C — CU MASTER's hand
MASTER: The answer, Doctor, is here.

49. 5 D — CU DR
(HOLDS UP PART OF MACHINE)

50. 3 F — M 2-S
DOCTOR: The trigger mechanism of the Light Accelerator?

MASTER: This will supply the deficient elements of your dematerialisation circuit. With a little ingenuity I may be able to combine one with the other. But it will take time.

DOCTOR: Not too much time, I hope. Right, you complete the repairs - I'll work out the course co-ordinates.

Let DR go L
ZOOM IN to CU MASTER
(HE MAKES TO LEAVE. RETURNS TO CONSOLE, REMOVES A PART)

Just in case you're tempted to leave without me.

(DOCTOR EXITS)

TELECINE FOUR

Model shot(s)

- NEW 29 -

- NEW 32/33/34 -

51. 1 D — 22. INT. CONTROL BOX. DAY
CU Monitor
ZOOM OUT to 3-S CHINN/ DR/BRIG.
YATES: (OOV) It's surfacing, sir - the whole thing!

(THE MODEL SHOT OF THE DOME SURFACING ON THE MONITOR(S). THE BRIGADIER AND THE DOCTOR ARE WATCHING)

- NEW 32/33/34 -

(51 on 1)

- NEW 35/36/37 -

(THE BRIGADIER GRABS THE MIC)

BRIGADIER: Pull out, Yates - back to the Complex.

YATES: (OOV) Sir.

BRIGADIER: What happens now, Doctor?

DOCTOR: Well .... the Axonite will start feeding. First on direct energy sources, such as this Complex. Then it will grow and become mobile. Increasing its feeding range ... and its size .... and finally -

(HE LOOKS UP, SMILES AT CHINN)

leaving to hunt fresh prey. By then the surface of the Earth should look very much like that of the moon. Dead!

(SILENCE)

TELECINE FIVE

Ext. Countryside. Day

- NEW 35/36/37 -

REPRODUCED BY ARRANGEMENT WITH BBCtv

STORY REVIEW

Paul Mount

Somewhere out in space, something huge and vaguely disgusting-looking is wobbling towards a familiar planet bearing its cargo of shrieking, tentacle-bedecked monstrosities...

"Whatever that thing is, it's on collision course and heading straight for Earth!" gasps an awed radar technician after a brief but highly accurate reconstruction of the opening moments of 'Spearhead from Space' (Serial "AAA"). It's a comfortable enough scenario, even by 1971 'Doctor Who' standards, and it would be easy to write off 'The Claws of Axos' as a simplistic adventure yarn chronicling yet another instance of the Doctor, his human allies at UNIT and a mixed bunch of bureaucrats and technocrats slugging it out against hideous aliens who just happen to have teamed up with the Master.

However, the debut 'Doctor Who' script from Bob Baker and Dave Martin works on two levels. There's a liberal amount of spectacle in amongst the scientific double-talk, but the serial's second and more interesting level is its central pivot, the unifying factor which binds together the entire cast of characters. Almost everyone involved in the struggle against Axos - and indeed Axos itself - is motivated by a blinding greed, whether that greed be for knowledge, power, acclaim or, in the Doctor's case, freedom. The very fact that the Doctor's ultimate greed, his selfishness in the face of Man's adversity, is apparently falsely-based, only serves to counterpoint the strength of the rapaciousness of the others.

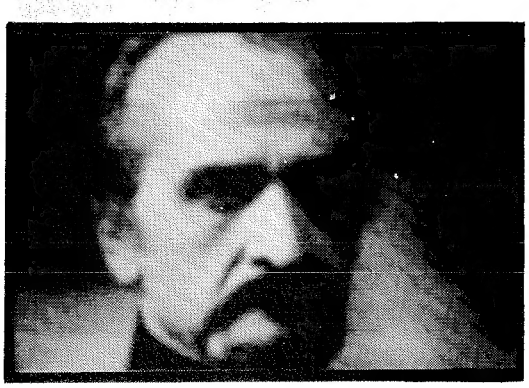
In 'The Claws of Axos' we have a story which, for once, depicts an Earth that is not so much invaded as subverted. The Axons themselves are the ultimate symbol of greed; travelling through the cosmos, draining planets of their lifeblood, they are, quite literally, 'vampires from space'. Theirs is a greed based on a determination to survive at whatever cost. To do so they subtly play on Mankind's weaknesses. In a world woefully short of the resources to support its indigenous population the Axons, with the aid of their Axonite ("the chameleon of the elements"), offer the capacity for unlimited food supplies and a powerful new source of energy. Only the Doctor recognises that even Axonite would be unlikely to "increase the growth of human common sense". In providing Axonite the Axons are able to play on Man's corruptible nature, turning it into a weapon. The obsequious Chinn sees himself as the great benefactor, the figure who disseminates Axonite across the world; Winser in turn clamours for his own greater glory amidst the scientific fraternity. Even superspy Bill Filer (a dreadful stereotype cast in a lamentable Clint Eastwood mould) falls into the clutches of Axos as a direct result of his desire to make an impression as an American agent in England.

Even the two Time Lords, the Master and the Doctor, appear to succumb to the claws of greed. The Master, having apparently fled the Earth at the end of 'The Mind of Evil' (Serial "FFF"), now craves its destruction, along with the Doctor and the humans who have intimidated him on two occasions. Thus he allies himself to Axos and leads it to Earth, even though in the process he becomes its pawn and eventually its prisoner.

Faced with the imminent destruction of his surrogate home, the Doctor, perhaps unsurprisingly considering Jon Pertwee's surly performances to date, appears quite willing to abandon the planet to its fate and rush off in the TARDIS in the company of the Master. "I don't want to spend the rest of my life as a heap of dust on a second-rate planet to a third-rate star," he bitterly informs the Master, before warning him that "we either escape together or we die together".

'The Claws of Axos' throws up a disturbing point. There's no denying that the Doctor is still, at this point, fervently determined to escape his planet of exile. Certainly an alliance with the Master, however unholy, seems to offer him his greatest chance to date. The Doctor's final insistences, when Axos has been caught in a vaguely-defined time loop, are achingly hollow and his farewell to Jo - "I shall miss <u>you</u>" - is surely too heartfelt for it to be the result of some dupe for the benefit of the Master. So it seems that even the destruction of the Earth is not too extortionate a price for the Doctor to pay for his freedom; indeed, it's his ceaseless thirst for knowledge that leads the planet into peril in the first place. Chinn's instincts are to destroy Axos before it arrives whilst the Doctor's are, as usual, for discretion. For once though, the Brigadier's "shoot first and think afterwards" tactics turn out to be the wisest.

But the serial doesn't really have any great affectation towards



morality; basically it sets out to tell a story, and whilst that story is, in itself, interesting, there is something to be desired in its presentation.

'The Claws of Axos' is tacky.

Its production is crude, heavy-handed and desperately unsubtle. Its roots as a seventh season story are evident in its setting - another massive scientific establishment, this time the Nuton Power Complex ("Britain's entire power supply") - but it bears little comparison to its predecessors, if only because of the programme's change of dramatic emphasis between seasons.

Curiously, the story is packed with powerful, highly memorable sequences and an equal number of scenes it might be better to try to forget. Typically of the period the serial is awash with spectacle. The organic Axos vessel is an ambitious idea and, with its writhing tentacles, vice-like claws and garish orange/red 'decor', it is remarkably impressive. It's only when we see a fraction of it jutting from the ground (the fraction afforded by the budget) that it loses believability; its petal-like entrance opens and closes affably enough for anyone who cares to enter or leave. The Axons themselves are excellent creations in all their forms. The 'beautiful' golden humanoids seem to create an image of peace and tranquility, their sightless eyes suggesting just a hint of menace. The 'monster' variation, on the other hand, is suitably hideous. Particularly successful is the scene in which the humanoid Axon transforms into the monstrous version in the Complex and tries to effect a 'slow-motion' escape, culminating in a highly explosive end for a couple of UNIT guards. The creatures' mass attack on the Complex in the last episode is well-achieved but the 'stunt Axons' involved in the battle with Yates and Benton aboard their jeep strain credibility just a little as they twist, roll and fall with the expertise of men from HAVOC.

It's the laughable inconsistencies and downright embarrassments that let the serial down. The simplistic, stereotyped tramp of the first episode grunts and groans like a redundant Wurzel: "Oooh Arhh" he continually mutters in 'Doctor Who's never-ending quest for gritty realism. The entrance of a newly-arrived Axos is left guarded by one UNIT soldier whom an escaping Master is able to dispose of unhindered before making his way to UNIT HQ. Following the collosal explosion of the Complex in the last episode, the Brigadier, Jo and UNIT's troops merrily rush back to the scene moments afterwards - conveniently for them, exactly on the spot for the reappearance of the TARDIS.

The inclusion of the Master into the storyline is extremely haphazard. His motive is obviously revenge, but he has little else to do except rave impotently, work reluctantly under the Brigadier's gun ("Either we destroy Axos or Axos destroys the World," he portentously announces at one point) and finally conspire with the Doctor. Once again Roger Delgado turns in an exemplary performance, even under the apparent threat of overkill.

For a story with a science-based locale, the 'science' in 'The Claws of Axos' is strictly toytown. The Doctor utters reams of gobbledegook with an admirable straight face. Having escaped from Axos he explains that "I simply boosted the circuits and broke free!" With one bound, perhaps...?

In an adventure story like this, other considerations such as 'acting' seem almost superfluous. Jo Grant has least to do of all the regulars - just scream from mightily-powerful lungs and get under everybody else's feet. Filer (Paul Grist) is far too irritating to make any favourable impact, whilst the best of the incidental characters is the inept Civil Servant Chinn (Peter Bathurst), who unfortunately fades out of the story well before its conclusion.

Special effects tend to be variable - from some dodgy CSO to some fine model work. An excellent glass shot establishes the size of the reactor room, where the Doctor and Jo are later terrorised by a man who is apparently wrapped up in an orange carpet in a desperate attempt to represent a ravaging lump of Axonite. These scenes - and more - are underscored by the most discordant, aggravating electronic wailing that ever attempted to pass muster as incidental music.

There's a lot in 'The Claws of Axos' - and this, possibly, is its downfall. It attempts too much and thus spreads itself too thinly, with none of its numerous sub-plots and themes receiving adequate attention. It's fast and furious, but ultimately it proves to be too much of a good thing.

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SPACE & TIME

PRODUCTION OFFICE

Jeremy Bentham

New writers attempting to break into the somewhat protectionist television industry frequently come up against a Catch 22 situation, particularly in the area of series and serials. Producers and script-writers, ever mindful of hard-won budgets and even harder-won reputations, naturally prefer to employ writers experienced in the TV medium. However, the only way to get experience is to be employed by a producer or script-editor...

Different writers have broken this 'vicious circle' in different ways. Robert Holmes, for example, succeeded by dogged persistence, working away on his script for 'The Krotons' (Serial "WW") under Terrance Dicks' patronage with no firm guarantee of a slot in an already-full production schedule in 1968/69 (see page "47-08"). In the case of enterprising newcomers Bob Baker and Dave Martin it was by one of Fate's more curious twists that they gained their wings, as Terrance Dicks explains:

"(Baker and Martin) made it by mistake, because of a totally misrouted script. They sent the BBC a comedy about Army life, which by some aberration of the internal post landed on my desk.

"I read it with great enjoyment and some bafflement, since it didn't seem to have anything to do with 'Doctor Who'. It was, however, very funny - fast moving, intelligent and witty. I got in touch with Bob and Dave - one tall, one smaller, known collectively as the Bristol Boys because that was where they lived - and after some discussion they wrote a storyline."

Bob Baker also recalls this curious train of events:

"We sent a play script to the BBC and didn't get an answer for a year. Then a producer rang up and said would we like to meet him? We went up to London, he got us very drunk in the bar, and we thought we were going to do a play about the Army, and kept asking about tanks and things like that, and if they could afford it all. Finally, after many gin and tonics, and through a drunken haze, he said, ' Do you know what we do?' We said 'No'. He said, 'We do 'Doctor Who''. 'Oh really? Now about these tanks...' Then he said, 'Would you like to do a 'Doctor Who'?' 'Yeah, fine. Now about these tanks...' So it went rather like that, but that was <u>the</u> beginning of our first 'Doctor Who'."

The storyline in question was penned during the early months of 1970, during that short but much needed period when Barry Letts and Terrance Dicks were able to sit back and consider what they wanted from their show. Between them, Letts and Dicks agreed to modify the format of the series (see page "55-08") and it was this revised formula that was put before Baker and Martin. For the two writers it was a challenging task, being the first time either of them had had to limit himself to working within a provided structure rather than simply within his own imagination. However, with Dave Martin having quit his job in advertising and gone on the dole to concentrate on a writing career, and with Bob Baker equally convinced he didn't want to be a teacher, a stonemason, a printer or a designer, the offer of so major a commission was too good to pass up.

This was also the writers' first experience of tackling the science fiction genre. Neither of them knew much about the technical side of television production, and particularly the areas of optical and special effects. Their one advantage, though, was a familiarity with the series, which Bob Baker recalls having watched on and off since the very first episode. So, armed with a fairly sound appreciation of the 'Doctor Who' mould, the 'Bristol Boys' commenced a summer task of evolving their storyline into a finished script, which began life under the title 'Vampire from Space'.

"We started with the idea of a brain," recalls Bob Baker, "the brain being able to project itself into the various forms that it wanted to make. Therefore, there was a ganglion, nerve endings which could actually produce the shape of a human being and fool you into thinking that that was actually what they were like. They also had (as with all our stories) a kind of other level, which was that of trade and capitalism, and the idea of Axonite being able to beguile the Earthmen into thinking 'Ah, here's the chance for a great trade', and by allowing the aliens in they could make some money out of them. So that was another threat to it."

Overall, the main bulk of the writing for 'Vampire from Space' took about two months, including the time taken by Terrance Dicks to read, evaluate and comment on the early drafts submitted. As with the writers' earlier Army script, the standard was very high, in fact remarkably so considering the relative inexperience of the pair. The resulting drafts were tightly-paced and action orientated with a rich variety of characters, ranging from a blustering Government buffoon (a familiar Dicks motif arising from a long-nurtured pet hate of officialdom) to a comic yokel.

If anything, the main problem Baker and Martin encountered was the necessity to limit their very fertile ideas

to match the series' restrictive budget. Bob Baker elaborates:

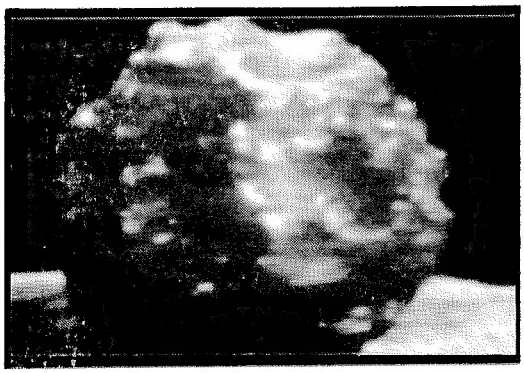
"Particularly on that first one we learned our lessons because they kept ringing up, saying 'We're not MGM you know. Do you think we can do this?' We had to pare our imaginations down a bit, be less original if you like, but not too much. The use of Colour Separation Overlay was just about coming in then, so you could do some rather extraordinary things."

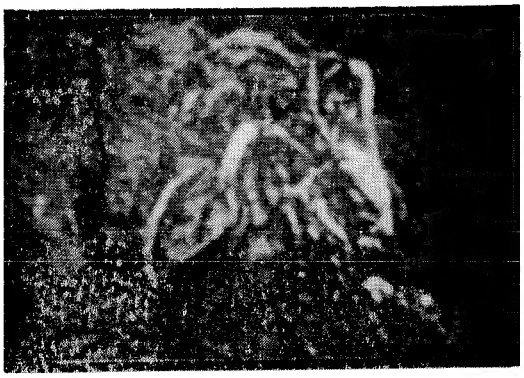
Only fairly late in the day was the title of the story changed to 'The Claws of Axos'. This was done on the instructions of Barry Letts, who felt that 'Vampire from Space' might invite comparisons with the 'Hammer Horror' genre and so send anxious parents racing for the 'off' button.

The finished scripts were very adventurous ones which would demand much of the series' production team. The experiment of commissioning two untried 'Doctor Who' writers had paid off, but Barry Letts was not prepared to gamble the production values on newcomers. He felt that this story needed a senior hand at the helm, so he asked for, and got, one of the BBC's most experienced, technically-minded drama directors, Michael Ferguson.

THE FLAWS OF AXOS?

Jeremy Bentham





As an alien entity, Axos - in all its many and varied forms - was arguably one of the boldest and most imaginative concepts to have been used in 'Doctor Who' up to 1971, being reminiscent in this respect of 'The Web Planet' (Serial "N"). And as with that 1960s story, it represented a daunting task for the production team, and particularly the designers, to realise the ideas in the script.

In the opening shots of the story Axos is revealed as a yellow/brown, vaguely bottle-shaped 'ship' travelling through space towards the Earth, apparently occupied by writhing, many-tentacled creatures. All the shots of Axos in space were done on video, using CSO to superimpose the ship model onto the starfield background. This was an experimental exercise to see if money and time could be saved by doing modelwork on VT instead of film. However, Producer Barry Letts was disappointed with the results and decided that for future stories film should continue to be used whenever possible.

Later in the first episode, when the Doctor's party ventures into the organic vessel after its landing in Southern England, the orange/red tentacled monsters are nowhere to be seen. Instead, they encounter four beautiful golden humanoids - a man, a woman, a boy and a girl or, as the script put it, "the Ad-man's dream 'Coca-Cola' family".

These "golden statue" (sic) Humanoid Axons were the responsibility of the Make-up Department, who successfully submerged the artistes beneath successive layers of gold greasepaint, gold wigs and forehead appliances which covered their eyes, giving them an eerie 'sightless' appearance, although there was in fact a series of pinholes in each appliance, allowing the performer a limited range of vision. Unfortunately, the original concept for these creatures' costumes proved unworkable. The intention had been to CSO-overlay the Axon body costumes with a moving, oil-based pattern, similar to that made by the liquid-wheel projectors used (via CSO) to form part of the set 'wall'. However, the patterns looked too flat and two-dimensional when CSO-keyed in, so the notion was dropped and the painted body suits used as they were - a fact which was at times all too obvious.

After greeting the human 'reception committee', the Humanoid Axons tell of their 'plight' and offer them a 'gift' - Axonite. Axonite, they explain, is the chameleon of the elements, capable of absorbing any form of energy and transforming it. By way of a demonstration they inject some of the Axonite (which appears as a sponge-like blob of orange matter) into a frog they have captured. The frog immediately begins to grow (again courtesy of CSO) until it is several times its original size. The Axon leader points out the obvious advantages if this process were applied to food animals, and the eager humans have nothing but admiration and enthusiasm for the miraculous substance - only the Doctor realises its potential dangers, immediately doubting the aliens' story. Later, the Time Lord discovers that Axos, the Humanoid Axons, the Axon monsters and Axonite are all parts of a single, shape-shifting entity - a parasite capable of splitting sections of itself off and later re-absorbing them.

In addition to the Humanoid Axons, the Baker/Martin script thus called for the creation of a number of other Axon monsters of various shapes and sizes, ranging from a floor-crawling 'glob' to a thrashing mass of tentacles. In the event, the budget would only run to one fully-tentacled Axon Monster - a heavy-duty latex rubber costume inlaid with literally hundreds of wire-cored tentacles, one of which could carry a remote electrically-detonated flash charge. A second, less-tentacled creature was also made, along with three other, lightweight costumes built over interior styrofoam padding. A rolling Axon 'glob' was also made, being basically just a painted sack inside which an actor could be concealed. So hot were all these costumes under the studio lights that a reserve quota of extras was hired, available, at a moment's notice, should one of the chosen actors fall victim to the high temperatures.

As Bob Baker has stated (see page "55-07"), there were a number of other areas in which, despite the best endeavours of the production team, it sadly proved impossible within 'Doctor Who's tight schedule and budget to realise the script in quite the way the writers had originally envisioned. Indeed, this story is an almost textbook case of imaginative writing needing to be pruned to meet the technical and financial restrictions of television production.

A number of ideas had to be abandoned or scaled down at the scripting stage. For example, it was originally intended that Axos would appear as a sort of pulsating space brain, shaped somewhat like a

gigantic domed jellyfish, descending out of the blue into busy, lunch-time Hyde Park in London. Given the state of the television art in 1970/71 it is easy to see why, for effects purposes, the amoebic jellyfish had to be replaced with something more solid-looking; why, due to the limitations of CSO, the landing sequence could not have been achieved convincingly; and why, due to organisational and financial limitations, a packed Hyde Park had to be dropped in favour of the deserted beaches of Dungeness. Only in the fourth episode of the transmitted story is a hint of the script's original scope accidentally left in, as Yates and Benton are despatched to set up a surveillance camera overlooking "the Spacedome" - an incongruous reference as Axos was anything but dome-shaped on screen.

Other compromises had to be made when the production went into studio at the Television Centre. Originally, for instance, Jo's rapid ageing into an old woman - an attempt by Axos to force the Doctor to co-operate - was to have been done in a number of stages, using CSO and blue latex make-up inlaid with rice to make the transformation more convincing and spectacular. In the end, however, Director Michael Ferguson had to settle for overlapping caption slides of Katy Manning gradually changing to her double, Mildred Brown.

Also dropped was a scheme to make small wax figurines of Pigbin Josh (the tramp) and Bill Filer, such that the bodies could either crumble (Josh's absorbtion) or explode (the Axon Filer) as dramatic effects shots. In both cases a simple - but nonetheless effective - faded-up white-out was used instead.

It can thus be seen that, visually impressive though 'The Claws of Axos' was, it could have been even more so had it had, say, the resources and budget of a major cinema film. Equally, however, it is apparent that this production took the BBC's visual effects staff and design teams into areas they had not previously explored (see also page "57-11"), pioneering a number of new and experimental techniques and thereby furthering 'Doctor Who's deserved reputation for breaking new ground and pushing forward the frontiers of television production.

THROUGH A GLASS DARKLY

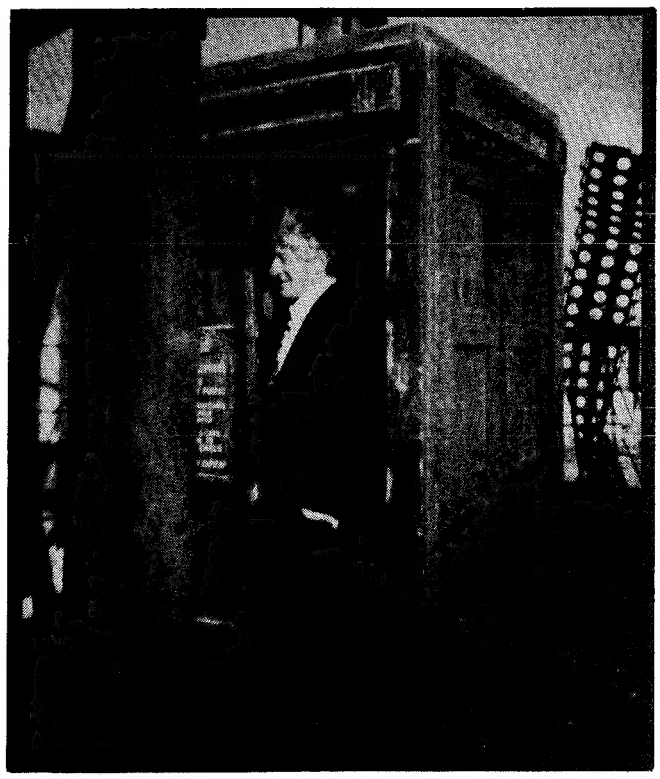
Tim Robins

When a director needs to create a larger area on screen than the studio set allows, or a landscape or structure not present on location, within or below which the action will take place, there are a number of methods he or she can use.

In television, the easiest and cheapest method is usually via electronic effects. In 'Doctor Who', vistas of various alien landscapes and cities - as far back as 'The Daleks' (Serial "B") - have been achieved by combining scale models with live action using such effects as Inlay, Overlay and CSO (see pages "45-08" and "56-09"). Occasionally other methods are used that have their origins in the theatre or cinema, the most common means of extending space and creating imposing structures being the painted backdrop. An alternative technique is the use of a glass shot.

A glass shot is created as follows: A large sheet of high-quality glass is mounted in front of the camera which is to shoot the action, the camera being 'locked off' in position. An image is then placed on portions of the sheet to extend the set (or location) horizontally or vertically, leaving just the area where the live action is to take place visible through the glass. The traditional form of glass shot requires a highly-skilled representational artist to paint the image on the glass, with tones, textures and lighting matching those of the studio set or location. Flat, oil-based paints capable of sticking to the smooth glass are used and the painting is built up gradually from a series of roughs. Guide points and an outline are sketched on the back of the glass then removed with solvent once the painting is completed on the front.

The hey-day of the glass shot in the cinema was in the 1920s and 1930s. Its most spectacular use was in creating the illusion of palatial palisades, monolithic monuments and towering temples so beloved of Hollywood Biblical ep-



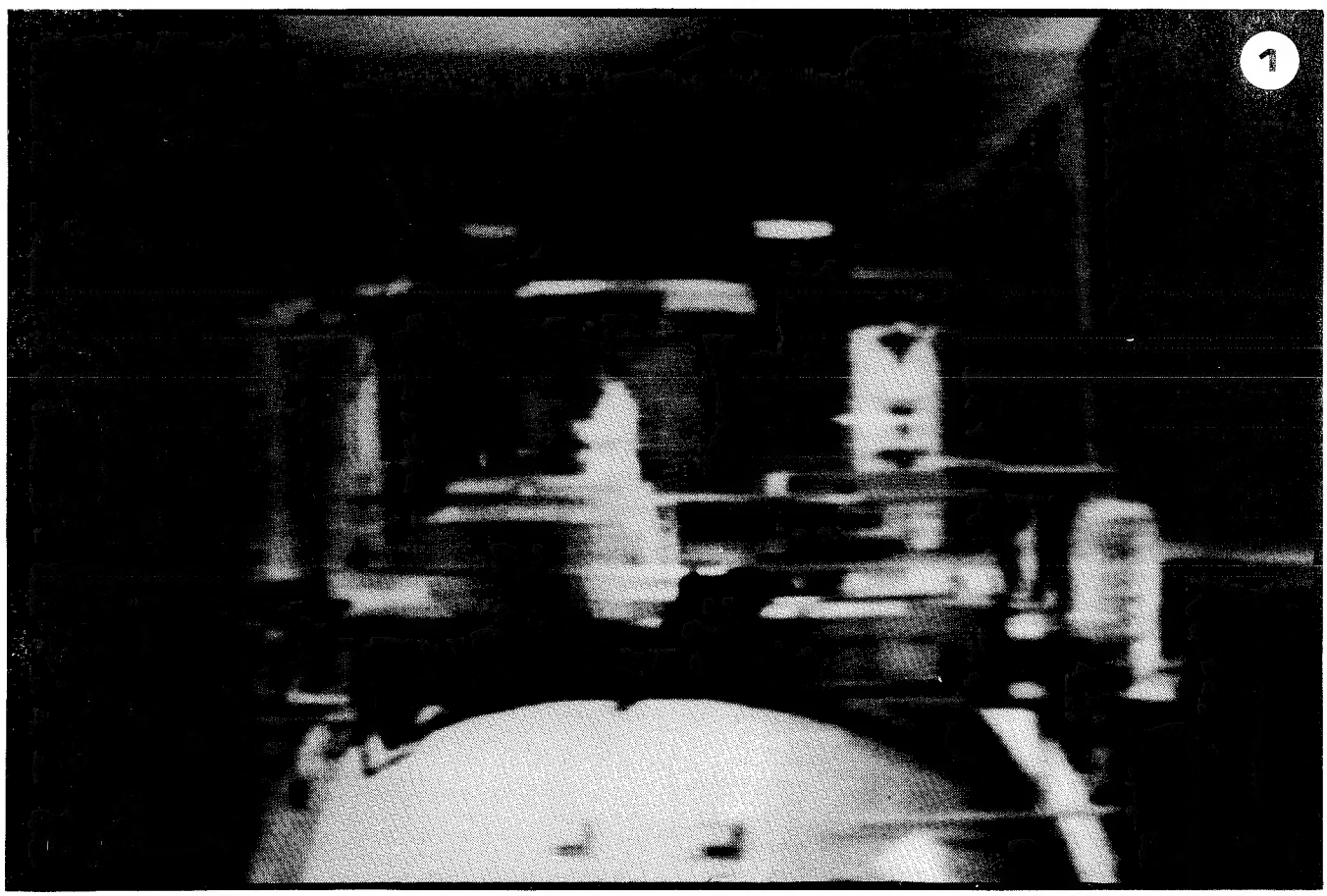
ics. Raymond Fielding in his book 'The Technique of Special Effects Cinematography' attributes the development of the technique to Norman Dawn, a cameraman/artist/director who first employed it for a motion picture in 1907. However, the glass shot is still used extensively today in such science-effection epics as the 'Star Wars' trilogy.

As a type of effect the glass shot may be seen as a form of image replacement - that is, as Fielding notes, "the replacement of selected portions of a particular scene with an entirely different kind of visual detail". The aim, he continues, "is usually either the pictorial enhancement of the final image or the saving of set construction cost" - or both. Glass shots can still be expensive and time-consuming to create, however, and this accounts for their relative scarcity on television. One alternative to the painted glass shot that is sometimes used as a money- and time-saving measure is the photo cut-out glass shot. As the name suggests, this involves using a cut-out photographic enlargement as the image on the glass rather than a painstaking piece of artwork. Photographs are not suitable for the subtle blending of continuous tones but are excellent for adding ceiling detail, roof tops and distant landscape detail, and for situations where natural 'apertures' are present in the still photograph within which the live action can take place.

A rare example of a glass shot in 'Doctor Who' is to be found in the second episode of 'The Claws of Axos' (the image on the glass being a photograph rather than a painting). In this instance it is an establishing shot, showing the setting of Winser's lab, the particle accelerator room (see Figure 1). The impression given is of a small work area situated between two huge spherical chambers, one above and one below it. The lab is thus given vast and impressive dimensions, greater than anything that could actually be constructed in a television studio. In reality, the set was simply a small, circular area bounded by metal railings with a transparent tube - the accelerator chamber - at its centre; everything else beyond this was a photographic image on the glass, masking studio floor and walls, lighting rigs hanging from the ceiling and so on. The rectangular area between the two spherical chambers thus formed the 'aperture' within which the live action took place. This illustrates well the main difference between painted and photo cut-out glass shots, which is that whereas with the former the painting is matched to an existing set, with the latter the photograph has to be taken in advance and the set must therefore be designed to fit within it.

Glass shots can also be used for special effects work (see page "44-07"), and an allied technique - one more commonly used in 'Doctor Who' in the late-1960s and 1970s - involves the positioning of a model rather than a sheet of glass in front of the camera. In this case a miniature is suspended from a frame to provide an extension to the live action picture - usually to the top of a set construction (see, for example, page "53-11").

Hanging models have an advantage over glass shots - particularly photographic ones - in that it is relatively easy to ensure that the model has the same lighting as the rest of the picture - an important consideration if the effect is to be successful. As with CSO, a number of other precautions need to be taken with glass shots to achieve a convincing illusion. In particular, both the camera and the sheet of glass must be rigidly mounted as any vibration will give the game away, and the focus of the painting/photograph must look realistic in relation to that of the live action picture. However, a well-executed glass shot can generally be more convincing than even the best CSO effect, and can be used to create some truly breathtaking pictures.



TECHNICAL NOTES

Jeremy Bentham

As well as having the experienced Michael Ferguson as Director, Barry Letts was also lucky enough to book Ken Sharp to design the sets for 'The Claws of Axos' and A.A. Englander - the BBC's most prestigious Film Cameraman - to shoot the location footage. Analysing the scripts, Ferguson and Sharp agreed that their biggest problems would come in trying to realise the interior of Axos. They concluded that everything would have to be tailor-made for these sequences; nothing could come from stock. The trick would be to achieve an epic look with the minimum of expense. As work on the costumes and sets neared completion, Michael Ferguson asked Barry Letts to set up a VT test session.

The main purpose of the test session was to try out Ken Sharp's idea of blending background live-action sets with CSO-ed foreground working model shots. Nowhere near as easy as it might sound, the skill to achieving this lay in lining up, illuminating and synchronising the foreground 'vignettes' to match up exactly with the background live action (see page "56-09"). The set featured a CSO screen in the 'brain' area masked by a foreground gauze to make the images slightly fuzzy and thus more 'organic-looking'. The test session was also used to try out the idea of achieving the Axon appearances and absorptions by means of CSO. By fading down a breaking-up CSO image of an Axon, Ferguson thought, the creature could be made to dissolve into its background rather than simply vanishing. These ideas worked successfully and some fifteen minutes of action was shot in the 'heart of Axos' set, showing the live-action Axon monsters writhing about beneath the all-seeing model Eye of Axos. Footage from this session, with the cameras zooming, canting and rolling around the composite set, was later incorporated into the opening shots of the first episode, and the convulsion scenes in the fourth.

Filming for 'The Claws of Axos' took place in the first week of January 1971, amidst extraordinary weather conditions. Snow, rain, sunshine, sea fog and hailstones beset the film crew, who also had to contend with the extremely short daylight hours at that time of year - which became even shorter if the sky was overcast. Abandoning all idea of visual continuity Ferguson's team went ahead with their planned shooting schedule anyway, and left it to Terrance Dicks to insert a line into the studio scenes explaining away the "freak weather conditions" doubtless caused by the presence of Axos...

The only major construction work done on location was the erecting of the Visual Effects-made Axos entranceway, a tunnel-shaped portal with a wire-sprung inner ring of door flaps. Wires were also used to effect the movement of the Axon tendrils, rather than resorting to the old technique of reverse-filming. The main advantage of this was that it saved a great deal of time. For example, a taut wire strung between an Axon and its UNIT soldier victim, along which a rubber tendril could be pulled, enabled death sequences to be shot in one take instead of several.

UNIT's mobile HQ made its location debut in this serial with matching coloured tape masking its true identity as a BBC outside broadcast control van.

The lengthiest sequence to film was the stunt fight between Yates, Benton and three Axons which culminated in the blowing up of a real Land Rover. Action sequences being a speciality of Michael Ferguson whis whole scene was shot in just one day, Derek Ware and A.A. Englander again collaborating successfully as they had done on 'The Ambassadors of Death' (Serial "CCC").

Apart from the location footage the only other use of film in this story was the modelwork of Axos and the power station blowing up. For this the power station was a two-dimensional photo cut-out, and the three-foot Axos model was saved from actual destruction by careful editing. The radar station establishing shot and the footage of the rocket attack on Axos came from stock.

The story entered studio TC3 on January 22nd/23rd for episodes one and two. The first day's recording concentrated on the relatively mundane scenes in the Earthbound sets. The remaining time was taken up planning and rehearsing all the complicated Nuton Lab and Axos shooting, which then took place the following day.

A glass shot was used to establish Winner's lab and its proximity to the nuclear reactor (see page "57-09").

One of Michael Ferguson's 'trademarks' was in evidence in the first episode - rapid video-disc intercutting between caption stills and rolling cameras as the Doctor's "analysis pattern" is read by Axos. Intercutting, overlaying and fading were also used for the multiple Axon Man head shots in episode three and for the Axos convulsion scenes in episode four, which Ferguson had wanted to do like the 'trip' scenes in the film '2001: A Space Odessey'.

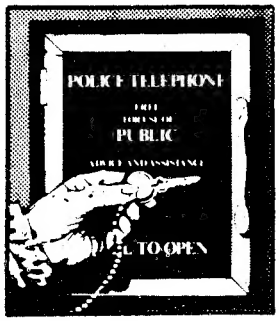
The Filer versus Filer fight was shot in the studio during the second recording block on February 5th/6th in TC4. Derek Ware acted as Filer's double, executing a complicated trampet back-flip for one shot during the action. The fight was discontinuously recorded to permit tighter editing and the insertion of cutaway shots to heighten the drama.

A large number of cutaway inserts were recorded for episodes three and four to increase the tension, especially during the climatic scenes as the Axons invade the power station. Visual Effects supplied the dissolvable styrofoam blast door and the spark machine needed during these scenes.

This story featured the introduction of the replacement TARDIS console with its new time rotor mechanism - a simpler device than before, capable only of rising and falling, not rotating. Neon light tubes made up most of its construction, the aim being to give it a more 'high tech' look. A major crisis almost blew up when Jon Pertwee punched a BBC employee who - due, as Pertwee thought, to extreme carelessness - broke one panel of the console while setting it up in the studio. Although medical attention was required the incident was fortunately smoothed over, the employee in question being persuaded to accept an apology rather than taking the matter further. The broken panel was patched up and kept out of camera shot, pending proper repairs.

Dudley Simpson supplied all of the incidental music for this story, with none coming from stock. Again the music was totally electronic, realised on the Radiophonic Workshop's synthesisers. As usual, Brian Hodgson was responsible for special sounds.

'The Claws of Axos' was the last story to feature Fernanda Marlowe as the short-lived UNIT regular Corporal Bell.



PRODUCTION CREDITS

Stephen James Walker

SERIAL "GGG" — COLOUR

PART 1	Duration 23' 51"	13th. March 1971
PART 2	Duration 24' 00"	20th. March 1971
PART 3	Duration 24' 05"	27th. March 1971
PART 4	Duration 25' 19"	3rd. April 1971

CAST

STARRING:
Doctor Who.....Jon Pertwee
Jo Grant.....Katy Manning
Brigadier Lethbridge-Stewart.....Nicholas Courtney
The Master.....Roger Delgado

FEATURING:
Captain Mike Yates.....Richard Franklin
Sergeant Benton.....John Levene
Bill Filer.....Paul Grist

Hardiman.....Donald Hewlett
Chinn.....Peter Bathurst
Winser.....David Savile

WITH:
Axon Man (Humanoid).....Bernard Holley
Axon Woman (Humanoid).....Patricia Gordino
Axon Boy (Humanoid).....John Hicks
Axon Girl (Humanoid).....Debbie Lee London
The Minister.....Kenneth Benda
Captain Harker.....Tim Pigott-Smith
1st Radar Operator.....Michael Walker
2nd Radar Operator.....David G. March
Pigbin Josh.....Derek Ware
Corporal Bell.....Fernanda Marlowe
Double for Axon Man.....Nick Hobbs
Nuton Driver.....Nick Hobbs
Double for Axon Woman.....Sue Crossland
Humanoid Axons.....Roger Minnice, Geoff Righty
Steve King, David Aldridge
'Globby' Axons/Axon 'Globs'.....Douglas Roe
Clinton Morris, Clive Roger
Rolling Axon 'Globs'.....Eden Fox, Stuart Myers
Laboratory Technicians.....Bill Bernsley
Paul Phillips, Peter Holmes
Victor Croxford, Royston Farrell
UNIT Soldiers.....Roy Brent, Bill Hughes
Douglas Roe, Clive Roger
Pierce McAvoy, Michael Stainer
Regular Army Soldiers....Steve Smart, Pierce McAvoy
George Howse
Civil Servants.....Pierce McAvoy, George Howse
Secretary.....Gloria Walker
Fake Filer.....Derek Ware
Nurse.....Gloria Walker
Double for Jo.....Mildred Brown
Corporal.....Clinton Morris
Axon Monsters.....Peter Holmes, Steve Smart
Marc Boyle
Double for Hardiman.....Jack Cooper
Stuntmen.....Stuart Fell, Derek Martin
Steve Emmerson, Jack Cooper
Reg Harding, Brian Gilman
Emmet Hennesey, Bob Blaine
Brian Justice

TECHNICAL CREDITS

Production Assistant.....Marion McDougall
Assistant Floor Manager.....Roselyn Parker
Assistant.....Sue Stapely
Technical Manager 1.....Ralph Walton
Technical Manager 2.....Bernard Fox
Sound Supervisor.....Dave Kitchen
Grams Operator.....Linton Howell-Hughes
Crew.....No. 10 (including Peter Granger)
No. 19 (Alec Wheal & Co.)
Vision Mixer.....Mike Catherwood
Floor Assistant.....Chris Fox
Film Cameraman.....A.A. Englander
Film Editor.....Bob Rymer
Visual Effects.....John Horton
Costumes.....Barbara Lane
Make-up.....Jan Harrison, Rhian Davies
Action.....HAVOC
Fight Arranger.....Derek Ware
Incidental Music.....Dudley Simpson
Special Sound.....Brian Hodgson
Script Editor.....Terrance Dicks
Designer.....Kenneth Sharp
Producer.....Barry Letts

DIRECTOR:

MICHAEL FERGUSON

BBCtv 1971